

# PATENT SPECIFICATION

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NO DRAWINGS.

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## COMPLETE SPECIFICATION.

### Improvements in or relating to Metal Protecting Preparations.

We, J. GODDARD & SONS LIMITED, a British Company, of 15/35, Nelson Street, Leicester, do hereby declare the invention, for which we pray that a patent may be granted to us, and the method by which it is to be performed, to be particularly described in and by the following statement:—

The invention is for improvements in or relating to metal protecting preparations and is concerned with a metal treatment preparation which incorporates a medium by which a cleaned metal surface is protected so as to retain its cleaned state for a prolonged period. The invention is especially concerned with preparations for cleaning metal surfaces containing silver, copper or nickel, and has for one of its objects to provide an effective preparation which is capable of being prepared in a simple manner and incorporates relatively inexpensive ingredients.

The invention provides a preparation bearing some similarity to the preparation forming the subject of our co-pending Patent Application 25235/63 (Serial No. 1,070,383), but containing a different protective ingredient.

In accordance with the invention there is provided a cleaning, protective or polishing preparation for metal surfaces containing silver, copper or nickel, comprising a cleaning or polishing medium in solid, liquid or paste form or a metal treating medium in admixture with a protective medium consisting of a dialkyl disulphide in which the alkyl groups have at least 8 carbon atoms. It is found that such a preparation is very effective in use and relatively economical to produce besides offering other advantages.

The protective medium may be admixed with a cleaning medium containing a phys-

ically active abrasive and/or consisting of or comprising a chemically reactive tarnish remover. The cleaning or polishing preparation may take the form of a liquid preparation adapted for application in the manner of a metal polish or a complex forming detarnishing solution or it may be in the form of a paste or cream. Further, if desired, the cleaning or polishing preparation may be in the form of a powder or semi-solid block suitable for application to a buffing wheel, or it may be impregnated into fibre, fabric or braid normally used for cleaning or polishing operations being held therein either as a powder or as a semi-solid.

The invention also comprises a metal treatment preparation for acting on metal surfaces containing silver, copper or nickel comprising a surface treatment medium in admixture with a protective medium consisting of dialkyl disulphide. Such a metal treatment preparation may consist of a pickling, detarnishing, brightening, de-scaling or etching bath. Thus by the incorporation of the protective medium any such bath may be caused to have tarnish inhibiting properties.

The invention further comprises a metal treating liquid protective preparation suitable for addition to the treatment bath for acting on surfaces containing silver, copper or nickel to impart tarnish inhibiting properties consisting of a solution in an organic solvent of a dialkyl disulphide.

In practising the invention the substance used to form the protective medium is preferably a dialkyl disulphide of the general formula  $R-S-S-R$  where R is a group derived from an alcohol of the general formula  $C_nH_{2n+1}-OH$  (aliphatic alcohol) and having from 8 to 22 carbon atoms. One

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such compound found to be particularly useful is distearyl (C18) disulphide.

Particular examples of how the invention can be carried into effect are preparations as described in the examples as given in co-  
5 pending Patent Application No. 25235/63 (Serial No. 1,070,383) modified by the employment of a dialkyl disulphide in place of the ester of a mercapto carboxylic acid. The  
10 procedure in producing such preparations is substantially the same as is described in our said co-pending earlier Application, and the proportions of the ingredients may be substantially as in the examples set out in  
15 our said earlier Application.

The provisions of the present invention enable a particularly effective range of metal protective preparations to be provided at a reasonably low cost.

20 WHAT WE CLAIM IS:—

1. A cleaning, protective or polishing preparation for metal surfaces containing silver, copper or nickel, comprising a cleaning or polishing medium in solid, liquid or  
25 paste form or a metal treating medium in admixture with a protective medium consisting of a dialkyl disulphide in which the alkyl groups have at least 8 carbon atoms.

2. A preparation according to Claim 1 which contains a physically active abrasive. 30

3. A preparation according to Claim 1 or Claim 2 which contains a chemically active tarnish remover.

4. A preparation according to any of the preceding claims in which the dialkyl disulphide has from 8 to 22 carbon atoms in the alkyl groups. 35

5. A preparation according to any of the preceding claims in which the dialkyl disulphide is distearyl disulphide. 40

6. A preparation according to any of Claims 1 to 5 which is in the form of a metal polish.

7. A preparation according to any of Claims 1 to 5 which is in the form of a powder. 45

8. A preparation according to any of Claims 1 to 5 which is in the form of a block suitable for application to a buffing wheel.

9. A preparation according to any of Claims 1 to 5 which is in the form of a metal treatment preparation. 50

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